

Remarks

Claims 1, 3, 4, 15 and 16 have been amended. Claims 10, 19-21, 23 and 24 have been canceled.

The Examiner has rejected applicant's claims 1-7, 10, 12, 13 and 15-24 under 35 USC 102(b) as unpatentable over the Izumi, et al. patent (US Patent No. 6,160,673). Claims 8, 9 and 11 have been rejected under 35 USC 103(a) based on the latter patent taken with the Williams patent (US Patent No. 6,344,749). Finally claim 14 has also been rejected under 35 USC 103(a) based on the Izumi, et al. patent taken with the Limberg, et al. patent (US Patent No. 6,426,780). With respect to applicants' claims, as amended, this rejection is respectfully traversed.

Applicants' independent claims 1 and 16 have been amended to better define applicants' invention. In particular, amended claim 1 recites a reproducing apparatus, comprising: reproducing means for reproducing an information signal; equalizing means for controlling a group delay of the information signal reproduced by said reproducing means; converting means for sampling the information signal output from said equalizing means and for converting the information signal into a digital signal composed of a plurality of bits per sample; detecting means for converting the digital signal output from said converting means into a n-values signal per sample; and control means for controlling a group delay characteristic of said equalizing means by using the digital signal to be input to said detecting means and the n-values signal output from said detecting means. Claim 16 has similar features and has been similarly amended.

In applicant's invention of claims 1 and 16 a reproducing means reproduces an information signal and an equalizing means controls a group delay of the information signal reproduced by the reproducing means. A converting means converts the information signal

reproduced by the reproducing means. A converting means converts the information signal output from the equalizing means into a digital signal composed of a plurality of bits per sample. A detecting means then converts the digital signal output from the converting means into a n-values signal per sample. Further, a group delay characteristic of the equalizing means is controlled by using the digital signal to be input to the detecting means and the n-values signal output from the detecting means. Such a construction is not taught or suggested by the cited art of record.

The Examiner has argued that the Izumi, et al. patent discloses a reproducing apparatus having the following:

“Reproducing means for reproducing an information signal (Fig. 5. Col. 11 line 38-48; Equalizing means for controlling a group delay of the information signal reproduced by the reproducing means (Fig. 5. Col 11 line 38+); Detecting means for detecting a digital signal from the information signal reproduced by said reproducing means (Fig. 1 reproduction amplifier 3 as described in Col. 11 line 38-48); Control means for controlling a group delay characteristic of said equalizing means by using reproduced information signal to be inputted to said detecting means and a detection result of said detecting means. (Fig. 5. Col 11 line 38-48).”

From a careful reading of this patent, the patent teaches “a reproduction amplifier 3 (signal detecting means) for detecting the digital signal recorded on a recording medium and outputting the first reproduction signal.” It also teaches a “fixed waveform-equalizing circuit 4 (compensation means) for compensating the phase and the amplitude of the first reproduction signal.” Finally, it further teaches “an A/D converter (conversion means) for sampling the waveform of the first reproduction signal compensated by the fixed

waveform-equalizing circuit 4 to convert it to the waveform of the second reproduction signal, a clock generating circuit 9 (clock signal-generating means) for generating a master clock signal which becomes a time reference of the whole motion of the apparatus for the synchronization, based on the first reproduction signal compensated by the fixed waveform-equalizing circuit 4, an automatic waveform-equalizing circuit 6 (waveform equalizer) for equalizing the waveform of the second reproduced signal, and a binary value-forming circuit 7 (binary value-forming means) for converting the output of the automatic equalizing circuit 6 to a binary format to detect the digital signal.”

In the Izumi, et al. patent, therefore, the reproduced signal from the reproduction amplifier 3 is fed to a fixed waveform equalizer circuit 4 and the output of the fixed equalizer 4 is fed to the A/D converter 5. This contrasts with applicants' claimed invention in which the equalizing means has its group delay characteristic controlled by the control means by using the digital signal to be input to a detecting means and the n-values signal output from the detecting means.

Moreover, the waveform equalizing circuit 63 of the automatic equalizing circuit 6 in the Izumi, et al. patent is merely followed by the binary value circuit 7. These components clearly do not equate to applicant's claimed combination of “equalizing means for controlling a group delay of the information signal reproduced by said reproducing means; converting means for sampling the information signal output from said equalizing means and for converting the information signal into a digital signal composed of a plurality of bits per sample; detecting means for converting the digital signal output from said converting means into a n-values signal per sample; and control means for controlling a group delay

characteristic of said equalizing means by using the digital signal to be input to said detecting means and the n-values signal output from said detecting means."

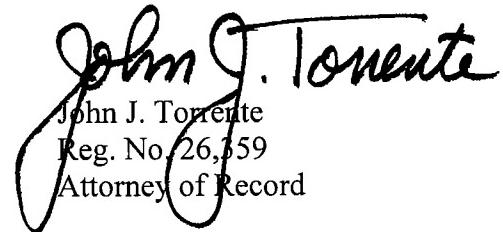
Applicant's amended claims 1 and 16, and their respective dependent claims, all of which recite such features in one form or another, thus patentably distinguish over the Izumi, et al. patent. Moreover, the Williams patent and the Limberg, et al. patent fail to add anything to the Izumi, et al. patent to change this conclusion.

In view of the above, it is submitted that applicants' claims, as amended, patentably distinguish over the cited art of record. Accordingly, reconsideration of the claims is respectfully requested.

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Respectfully submitted,

COWAN, LIEBOWITZ & LATMAN, P.C.
1133 Avenue of the Americas
New York, New York 10036-6799
T: (212) 790-9273


John J. Tonente
Reg. No. 26,359
Attorney of Record